

WHAT IS CLAIMED IS:

1. A process for modifying a polymeric photoactive sulfone membrane comprising:

5 placing the polymeric photoactive sulfone membrane into the presence of acrylic acid monomer dissolved in a solution and without sensitizer or free radical initiator; and

10 exposing the membrane to non-ionizing UV radiation for a selected period of time for modifying the membrane by chemical grafting and attachment of the monomer at the surface of the membrane by covalent bonding without any sensitizer or free radical initiator.

2. A process according to claim 1, further comprising selecting the polymeric photoactive sulfone membrane from
15 the group consisting of polysulfone, polyethersulfone, and polyarylsulfone.

3. A process according to claim 1, wherein the UV radiation for exposing the membrane is selected to have an energy below an energy (E2) at which a maximum degree of
20 grafting onto the membrane surface occurs in a graph plotting degree of grafting against irradiation energy, and near an energy (E1) below which chain-scission is minimized.

4. A process according to claim 1, further including
25 washing the modified membrane in a washing agent containing a solvent selected from the group consisting of ethanol, glycol, ether, acid, hydrocarbon, or mixtures thereof, which agent is adapted to wash homopolymer formed in the solution, from the modified membrane.

30 5. A process for modifying a polymeric photoactive sulfone membrane comprising:

placing the polymeric photoactive sulfone membrane into the presence of a solution containing at least one monomer; and

5 exposing the membrane to UV radiation for modifying the membrane by chemical grafting and attachment of the monomer at the surface of the membrane, the UV radiation having an energy selected to be below an energy (E2) at which a maximum degree of grafting onto the membrane surface occurs in a graph plotting degree of grafting
10 against irradiation energy, and near an energy (E1) below which chain-scission is minimized.

6. A process according to claim 5, further comprising selecting the polymeric photoactive sulfone membrane from the group consisting of polysulfone, polyethersulfone, and
15 polyarylsulfone.

7. A process according to claim 5, further including washing the modified membrane in a washing agent containing a solvent selected from the group consisting of ethanol, glycol, ether, acid, hydrocarbon, or mixtures thereof,
20 which agent is adapted to wash homopolymer formed in the solution, from the modified membrane.

8. A process for modifying a polymeric photoactive sulfone membrane comprising:

25 placing the polymeric photoactive sulfone membrane into the presence of a solution containing at least one monomer;

exposing the membrane to UV radiation for modifying the membrane by chemical grafting and attachment of the monomer at the surface of the membrane, the monomer also
30 forming homopolymer in the solution which is not grafted to the membrane; and

thereafter washing the modified membrane in a washing

agent containing a solvent selected from the group consisting of ethanol, glycol, ether, acid, hydrocarbon, or mixtures thereof, which agent is adapted to wash the homopolmer from the modified membrane.

- 5 9. A process according to claim 8, further comprising selecting the polymeric photoactive sulfone membrane from the group consisting of polysulfone, polyethersulfone, and polyarylsulfone.

- 10 10. A modified polymeric photoactive sulfone membrane made by the process comprising:

 placing the polymeric photoactive sulfone membrane into the presence of acrylic acid monomer dissolved in a solution and without sensitizer or free radical initiator; and

- 15 exposing the membrane to non-ionizing UV radiation for a selected period of time for modifying the membrane by chemical grafting and attachment of the monomer at the surface of the membrane by covalent bonding without any sensitizer or free radical initiator.